

CLAIMS

1. An ink set comprising plural inks for inkjet, each one of the plural inks having a maximum absorption wavelength of one of from 500 to 580 nm and from 580 to 680 nm in an aqueous medium and a different absorbance,

wherein based on an absorbance of a dye (or a combination of dyes) in an ink, which has a maximum dye concentration out of the plural inks, an absorbance of a dye (or a combination of dyes) in all another ink excepting the ink having a maximum dye concentration is from 1/20 to 1/2.

2. The ink set for inkjet recording as claimed in claim 1, wherein each one of the plural inks has a maximum absorption wavelength of from 500 to 580 nm in an aqueous medium.

3. The ink set for inkjet recording as claimed in claim 2, wherein out of dyes contained in an ink having a maximum dye concentration in the plural inks constituting the ink set, a dye having a maximum absorbance is an azo dye having a chromophore represented by the following formula:

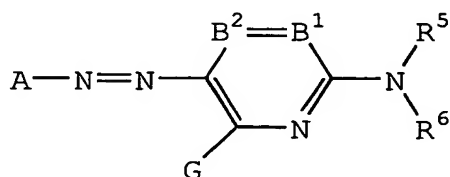
[(heterocyclic ring A) -N=N- (heterocyclic ring B)]

wherein the heterocyclic ring A and the heterocyclic B may have the same structure.

5 4. The ink set for inkjet recording as claimed in claim 3, wherein the azo dye having a chromophore represented by the formula [(heterocyclic ring A)-N=N-(heterocyclic ring B)] is a colorant having an oxidation potential of more positive than 0.7 V (vs SCE).

10 5. The ink set for inkjet recording as claimed in any one of claims 2 to 4, wherein the azo dye is a dye represented by the following formula (1):

Formula (1):



wherein A represents a 5-membered heterocyclic group;

20 B¹ and B² each represents =CR¹- or -CR²= or either one of B¹ and B² represents a nitrogen atom and other represents =CR¹- or -CR²=;

 R⁵ and R⁶ each independently represents a hydrogen atom or a substituent, the substituent is an aliphatic

group, an aromatic group, a heterocyclic group, an acyl group, an alkoxy carbonyl group, an aryloxy carbonyl group, a carbamoyl group, an alkylsulfonyl group, an arylsulfonyl group or a sulfamoyl group, and the hydrogen atom of each
5 substituent may be substituted;

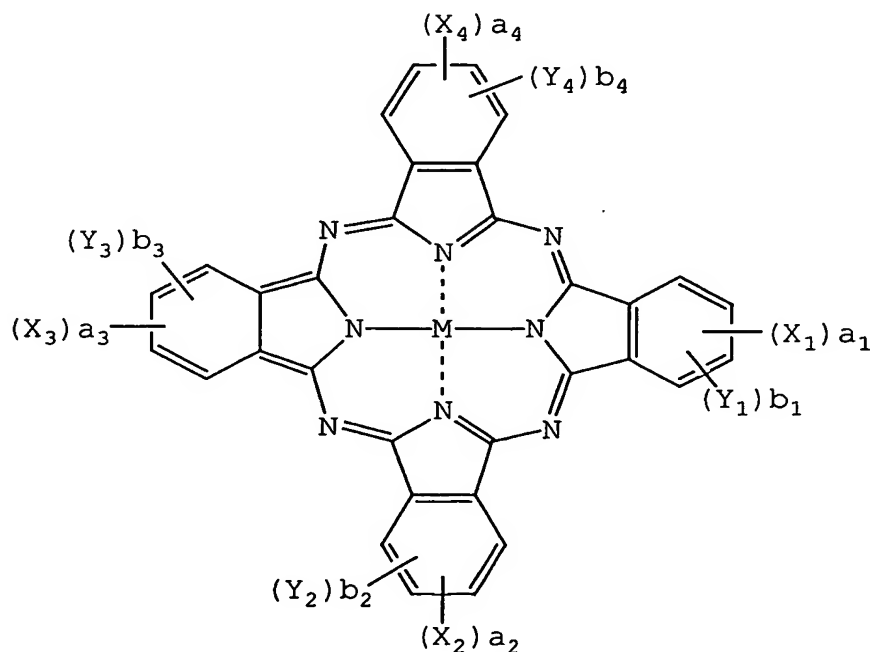
G, R¹ and R² each independently represents a hydrogen atom or a substituent, the substituent is a halogen atom, an aliphatic group, an aromatic group, a heterocyclic group, a cyano group, a carboxyl group, a carbamoyl group, an
10 alkoxy carbonyl group, an aryloxy carbonyl group, a heterocyclic oxy carbonyl group, an acyl group, a hydroxy group, an alkoxy group, an aryloxy group, a heterocyclic oxy group, a silyloxy group, an acyloxy group, a carbamoyloxy group, an alkoxy carbonyloxy group, an
15 aryloxy carbonyloxy group, an amino group, an acylamino group, a ureido group, a sulfamoylamino group, an alkoxy carbonylamino group, an aryloxy carbonylamino group, an alkylsulfonylamino group, an arylsulfonylamino group, a heterocyclic sulfonylamino group, a nitro group, an
20 alkylthio group, an arylthio group, a heterocyclic thio group, an alkylsulfonyl group, an arylsulfonyl group, a heterocyclic sulfonyl group, an alkylsulfinyl group, an arylsulfinyl group, a heterocyclic sulfinyl group, a sulfamoyl group or a sulfo group, and the hydrogen atom of
25 each substituent may be substituted; and

R^1 and R^5 , or R^5 and R^6 may combine to form a 5- or 6-membered ring.

6. The ink set for inkjet recording as claimed in claim 1, wherein each one of the plural inks has a maximum absorption wavelength of from 580 to 680 nm in the aqueous medium.

7. The ink set for inkjet recording as claimed in claim 6, wherein out of dyes contained in an ink having a maximum dye concentration in the plural inks constituting the ink set, a dye having a maximum absorbance is a dye represented by the following formula (I):

Formula (I):



wherein X_1 , X_2 , X_3 and X_4 each independently represents $-SO-$

Z, $-\text{SO}_2\text{-Z}$, $-\text{SO}_2\text{NR}_1\text{R}_2$, a sulfo group, $-\text{CONR}_1\text{R}_2$ or $-\text{CO}_2\text{R}_1$,

(wherein Z represents a substituted or unsubstituted alkyl group, a substituted or unsubstituted cycloalkyl group, a substituted or unsubstituted alkenyl group, a substituted or unsubstituted aralkyl group, a substituted or unsubstituted aryl group, or a substituted or unsubstituted heterocyclic group, and R_1 and R_2 each independently represents a hydrogen atom, a substituted or unsubstituted alkyl group, a substituted or unsubstituted cycloalkyl group, a substituted or unsubstituted alkenyl group, a substituted or unsubstituted aralkyl group, a substituted or unsubstituted aryl group, or a substituted or unsubstituted heterocyclic group, provided that when multiple Zs are present, these may be the same or different),

Y_1 , Y_2 , Y_3 and Y_4 each independently represents a monovalent substituent, provided that when multiple X_1s , X_2s , X_3s , X_4s , Y_1s , Y_2s , Y_3s or Y_4s are present, these may be the same or different,

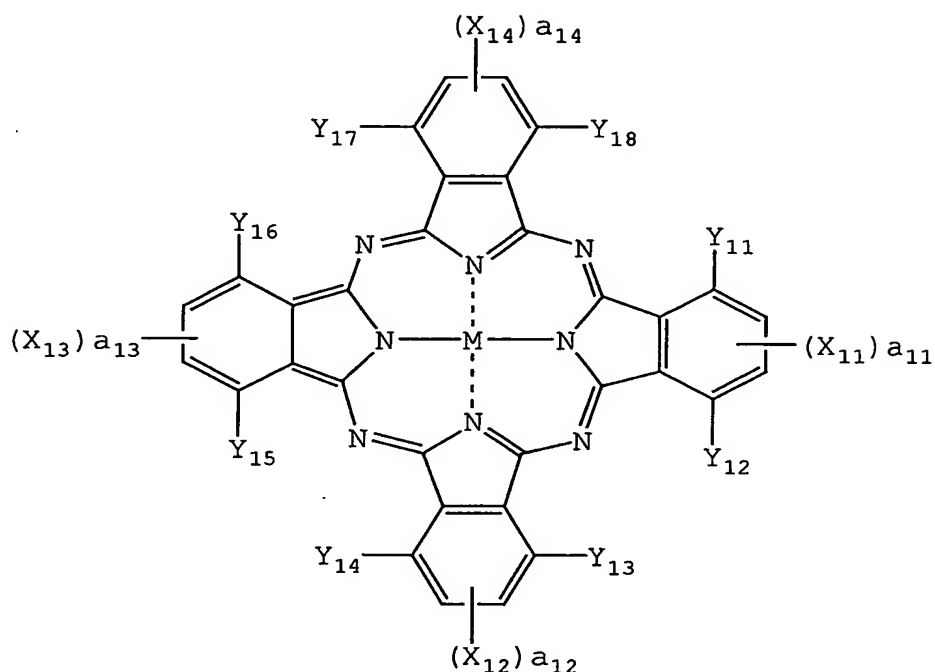
a_1 to a_4 and b_1 to b_4 represent the number of substituents of X_1 to X_4 and Y_1 to Y_4 , respectively, a_1 to a_4 each independently represents 0 or an integer of 1 to 4 but all are not 0 at the same time, b_1 to b_4 each independently represents 0 or an integer of 1 to 4, and

M represents a hydrogen atom, a metal atom or an

oxide, hydroxide or halide thereof.

8. The ink set for inkjet recording as claimed in claim 7, wherein the dye represented by formula (I) is a dye represented by the following formula (II):

Formula (II):



wherein X_{11} to X_{14} , Y_{11} to Y_{18} and M have the same meanings as X_1 to X_4 , Y_1 to Y_4 and M in formula (I), respectively,

10 and

a_{11} to a_{14} each independently represents an integer of 1 or 2.

9. The ink set for inkjet recording as claimed in claim 7 or 8, wherein the dye represented by formula (I) is

a colorant having an oxidation potential of more positive than 0.7 V (vs SCE).

10. An inkjet recording method, which uses the ink
5 set as claimed in any one of claims 1 to 9.

11. The inkjet recording method as claimed in claim
10, which uses the ink set claimed in any one of claims 2
to 5.

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12. The inkjet recording method as claimed in claim
10, which uses the ink set claimed in any one of claims 6
to 9.

15 13. The inkjet recording method as claimed in
claims 10 to 12, wherein an image is recorded by ejecting
ink droplets according to recording signals on an image-
receiving material, which comprises a support and an image-
receiving layer containing an inorganic white pigment
20 particle on the support.

14. The inkjet recording method as claimed in claim
13, wherein the image-receiving layer comprises the
inorganic white pigment particle and at least one aqueous
25 binder selected from polyvinyl alcohol, silanol-modified

polyvinyl alcohol, starch, cationized starch, gelatin,
carboxyalkyl cellulose, casein and polyvinylpyrrolidone.